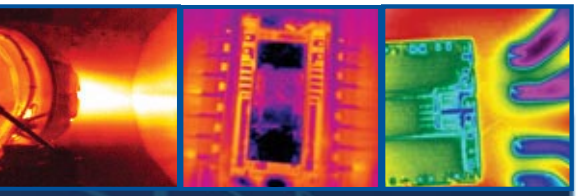
ThermaCAM® S60

The ThermaCAM® S60 is a powerful real-time data acquisition system featuring highly sensitive thermal imaging, precision temperature measurement and extensive data analysis capabilities.

Compact and easy-to-use, the innovative S60 infrared camera offers unprecedented flexibility and delivers a complete, rapid and accurate solution for understanding and managing thermal performance.



- SUPERB IMAGE QUALITY
- PRECISION NON-CONTACT TEMPERATURE MEASUREMENT
- VISUAL AND THERMAL IMAGING
- COMPACT, ERGONOMIC AND PORTABLE
- REAL-TIME RECORDING IN THE FIELD
- FIREWIRE (IEEE 1394) HIGH SPEED RADIOMETRIC IMAGE AND DATA TRANSFER
- FULLY RADIOMETRIC JPEG IMAGE STORAGE
- WIRELESS IRDA COMMUNICATION
- WIDE ARRAY OF OPTICS
- CHOICE OF VIEWING OPTIONS
- POWERFUL DIGITAL STORAGE, ANALYSIS AND HIGH SPEED DATA ACQUISITION SOFTWARE

EXTRAORDINARY IMAGING AND HIGH THERMAL SENSITIVITY

Unparalleled thermal sensitivity reveals critical details, letting you accurately evaluate and monitor thermal performance. Advanced fourth generation 320 x 240 uncooled microbolometer FPA detector technology delivers outstanding, noise-free, crisp, high-resolution longwave images with over 76,000 picture elements. Identify thermal faults before they result in costly design flaws.

INSTANT PRECISION NON-CONTACT TEMPERATURE MEASUREMENT

Optimized for outstanding radiometric performance, view temperature variances as small as 0.06°C on sharp, calibrated high-definition images which are automatically adjusted to give you the best picture possible. Measure any one of the 76,000 picture elements in each image. See the thermal impact of your engineering designs instantly.

FLEXIBLE IMAGE STORAGE

Save images as fully radiometric 14-bit JPEG's on removable Compact Flash cards (128 MB) or in the S60's internal Flash memory. Up to 600 real-time fully radiometric thermal images can also be stored in the camera's built-in 128MB RAM, designed for burst recording. Variable speed recording allows users to customize image storage rate.

REAL-TIME RECORDING AND PLAYBACK IN THE FIELD

Standard video rate imaging (60Hz) allows you to scan fast moving targets and dynamic events. Capture real-time images and record on the S60's built-in memory (128MB). In-camera playback allows you to view images in the field and select which sequences or images to save. Eliminates storing non-pertinent data and the need to carry your PC into the field.

FIREWIRE DIGITAL OUTPUT FOR HIGH SPEED IMAGE AND DATA TRANSFER

Enhanced connectivity options include IEEE 1394 interface for super fast image and data transfer of real-time, fully radiometric 14-bit JPEG images or sequence files to a PC.

DOWNLOAD, DOCUMENT AND ANALYZE

Download images with full 14-bit pixel values and all relevant data to your PC quickly using USB digital link or RS232 standard serial connection. Standard composite video and S-video output for higher image definition available. ThermaCAM Connect™ software (included) allows easy download of standard JPEG's to a PC; use this 'Plug and Play' feature to document your findings by inserting thermal images into your favorite Windows® Program or IR analysis software for further study.

COMPACT, ERGONOMIC AND LIGHTWEIGHT

Extremely ergonomic design and lightweight (< 4.4 lbs.) allows maximum user flexibility for fast, mobile data acquisition and analysis in the field, on the manufacturing floor or in the lab. Carry by its top handle or mount on a tripod. Split system design lets you remotely control camera and view targets on either the built-in color viewfinder or on the detachable 4" LCD, conveniently located on the S60's carrying handle. Customize to your unique test scenario.

LOCATE THERMAL ANOMALIES QUICKLY, SAFELY AND ACCURATELY

Built-in color digital camera stores visual images together with corresponding thermal images, clearly pinpointing problem areas. Integral Laser LocatIR™ helps you quickly and safely associate the hot spot on the IR image with the exact location of the problem, eliminating the tendency to 'finger point' at potentially dangerous thermal areas.

WIDE ARRAY OF OPTICS

Magnification and microscopic optics available to meet diverse temperature measurement scenarios, regardless of target size, distance or temperature variations.

POWERFUL SOFTWARE FOR IN-DEPTH ANALYSIS AND DIGITAL RECORDING

ThermaCAM Researcher collects data directly from the S60 at a rate of 60 frames per second through a firewire connection, ideal for applications where further analysis of dynamic objects and high speed events is required. Data can be seamlessly exported to Excel,® MatLab® and other common analysis programs; sequences of images can be stored for later playback or converted to AVI Files.

THERMACAM® S60 TECHNICAL SPECIFICATIONS

IMAGING PERFORMANCE

THERMAL

Field of view/min focus distance	24° x 18° / 0.3 m
Spatial resolution (IFOV)	1.3 mrad
Image frequency	60 Hz
Thermal sensitivity @ 50/60Hz	0.06 °C at 30 °C
Electronic zoom function	2,4,8, interpolating
Focus	Automatic or manual
Digital image enhancement	Normal and enhanced
Detector type	Focal plane array (FPA) uncooled microbolometer 320 x 240 pixels
Spectral range	7.5 to 13 µm

VISUAL

Built-in digital video	640 x 480 pixels, full color

IMAGE PRESENTATION

Viewfinder	Built-in high resolution color LCD (TFT)
External display	4" LCD with integrated remote control
Video output	RS170 EIA/NTSC or CCIR/PAL composite video & digital video

MEASUREMENT

Temperature ranges	-40°C to +120°C (-40°F to +248°F), Range 1 0°C to +500 °C (+32°F to 932°F), Range 2 +350 °C to +1500 °C (+662 to +2732°F), Range 3 Up to +2000 °C (+3632°F), optional
Accuracy (% of reading)	± 2 °C or ± 2%
Measurement modes	Spot/manual (up to 10 movable), Spot/automatic placement at max, min, Area (up to 5 movable), isotherm (2), line profile, Delta T
Emissivity correction	Variable from 0.1 to 1.0 or select from listings in pre-defined material list
Measurement features	Automatic corrections based on user input for reflected ambient temperature, distance, relative humidity, atmospheric transmission, and external optics
Optics transmission correction	Automatic, based on signals from internal sensors

IMAGE STORAGE

Type	Removable Flash-card (128 MB), Built-in Flash memory (50 images) Built-in RAM memory for real-time recording (600 images)
File format – THERMAL	Standard JPEG. 14 bit measurement data included
File format –VISUAL	Standard JPEG (including movable marker) linked with corresponding thermal image
Voice annotation of images	30 seconds of digital voice "clip" stored with the image
Text annotation of images	Predefined by user and stored with image

SYSTEM STATUS INDICATOR

LCD Display	Shows status of battery and storage media. Indication of power, communication and storage modes

LASER LOCATIR™

Classification & Type	Class 2, Semiconductor A1GaInP Diode Laser: 1mW/635 nm (red)

POWER SOURCE

Battery type	Li-Ion, rechargeable, field-replaceable
Battery operating time	2 hours continuous operation
Charging system	In camera (AC adapter or 12V from car) or 2 bay intelligent charger
External power operation	AC adapter 110/220 VAC, 50/60Hz or 12V from car (cable with standard plug optional)
Power saving	Automatic shutdown and sleep mode (user-selectable)

ENVIRONMENTAL

Operating temperature range	-15°C to +50°C (5°F to 122°F)
Storage temperature range	-40°C to +70°C (-40°F to 158°F)
Humidity	Operating and storage 10% to 95%, non-condensing, IEC 359
Encapsulation	IP 54 IEC 529
Shock	Operational: 25G, IEC 68-2-29
Vibration	Operational: 2G, IEC 68-2-6

PHYSICAL CHARACTERISTICS

Weight	2.0 kg (4.4 lbs) w/battery and top handle (includes remote control, LCD, video camera and laser) 1.4 kg (3.1lbs) excluding battery and handle
Size	100mm x 120mm x 220 mm (3.9" x 4.7" x 8.7") camera only
Tripod mounting	1/4"– 20

THERMACAM® S60 SYSTEM INCLUDES:

- IR camera with visual camera, Laser LocatIR, remote control with LCD display
- Carrying case
- Lens cap, shoulder strap, hand strap
- Manual
- Batteries (2)
- Power supply
- Battery charger
- Head-set
- Firewire Cable
- Video cable RCA-plug
- USB cable
- Flash Card
- ThermaCAM® Connect™ Software

LENSES (OPTIONAL)

Field of view/minimum focus distance

- 3X Telescope (7° x 5.3°/4m)
- 2X Telescope (12° X 9°/1.2m)
- 0.5X Wide angle (45° x 34°/0.1m)
- 0.3X Wide angle (80° x 60°/0.1m)
- 200 µm Close-up (64mm x 48mm/150mm)
- 100 µm Close-up (34mm x 25mm/80mm)
- 49 µm Macro (15mm x 11mm/19mm)

Lens Identification Automatic

INTERFACES

Firewire output	Real-time (60Hz) digital transfer of radiometric thermal images
USB / RS232	Image (thermal and visual), measurement data, voice and text transfer to PC
Remote control	Top carrying handle with video camera, laser locator and LCD

FLIR SYSTEMS™

The Global Leader in Infrared Cameras

1-800-GO-INFRA

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